

Claims:

According to Examiner's requirements about the Election/Restrictions, Applicant has selected the amended claims 1-15, cancelled the amended claims 16-28, and substituted new claims 29-37 as follows:

Claim 1 (currently amended): A multiuser ~~DSSS-OFDM~~
~~direct sequence spread spectrum (DSSS) orthogonal frequency~~
~~division multiplexing (OFDM) multiband of UWB ultra~~
~~wideband (UWB) base station communication transmitter~~
~~system comprising:~~

~~a multiuser encoding and spreading unit;~~
~~a polyphase-based multiband;~~
~~a IFFT unit;~~
~~a filtering unit, and~~
~~a multiband-based modulation and multicarrier.~~

N UWB mobile stations, where N is an integer and
greater than 1;

an UWB basestation coupled to an UWB network
interface that is connected to an UWB network;
said UWB basestation further including P
convolution encoders, P interleavers, P multiplexer modules,
P user keys, a summation, a multiband splitter, M serial-
to-parallel (S/P) converters, an inverse fast Fourier
transforms (IFFT) unit, M guards, M filtering units, a
multiband multicarrier modulation, and a power amplifier
(PA), where P and M are integers and greater than 1;

said summation is a block-based operation;
said P user keys generating P different
sequences;

each of said P user keys spreading with each
output of said P interleavers by each of said P multiplexer
modules;

said UWB basestation receiving N different UWB
signals from said N UWB mobile stations;

said UWB basestation transmitting N user's UWB signals containing N different user keys to N UWB mobile stations; and

each of said N UWB mobile stations transmitting UWB signals including one user key to said UWB basestation.

Claim 2 (currently amended): The multiuser ~~DSSS-OFDM DSSS OFDM~~ multiband of UWB ~~base station~~ communication ~~transmitter system~~ of claim 1 wherein ~~said multiuser encoding and spreading unit includes an N-user bitstream, a N-convolution encoder, a N-interleaver, a N-spread multiplier, and a N-user key sequence. each of said P user keys is a unique pseudorandom (PN) sequence.~~

Claim 3 (currently amended): The multiuser ~~DSSS-OFDM DSSS OFDM~~ multiband of UWB ~~base station~~ communication ~~transmitter system~~ of claim 2 wherein ~~said N-user key sequence is orthogonal each other each of the P user keys represents a password for a user.~~

Claim 4 (currently amended): The multiuser ~~DSSS-OFDM DSSS OFDM~~ multiband of UWB ~~base station~~ communication ~~transmitter system~~ of claim 3 wherein a cross-correlation between one user key ~~sequence~~ and other user ~~keys~~ ~~sequences~~ is almost equal to zero value.

Claim 5 (currently amended): The multiuser ~~DSSS-OFDM DSSS OFDM~~ multiband of UWB ~~base station~~ communication ~~transmitter system~~ of claim 1 wherein ~~said polyphase-based multiband splitter further includes including ten sample delay[[s]] units, eleven down sample[[s]] units, eleven~~

random access memory (RAM) memories units, and [[one]] a modular counter.

Claim 6 (currently amended): The multiuser ~~DSSS-OFDM~~ ~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication ~~transmitter system~~ of claim 5 wherein said ~~polyphase-based~~ multiband splitter converts an N length of a serial sequence into eleven multiband sequences with a length of $N/11$, where N is equal to $11B$ and B is an integer and greater than 1.

Claim 7 (currently amended): The multiuser ~~DSSS-OFDM~~ ~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication ~~transmitter system~~ of claim 1 wherein said IFFT unit includes further having eleven independent and identical IFFT structures that are operated in parallel [[,]] each of the IFFTs having 24 Nulls and 512 complex inputs to produce 1024 real-value output.

Claim 8 (currently amended): The multiuser ~~DSSS-OFDM~~ ~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication ~~transmitter system~~ of claim 1 wherein each of said M filtering units includes eleven filtering sections, each filtering section further having a dual-switch, two transmitter shaped filters, two digital-to-analog (D/A) converters, two analog reconstruction filters, and [[one]] a bit detector.

Claim 9 (currently amended): The multiuser ~~DSSS-OFDM~~
~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication
~~transmitter system~~ of claim 8 wherein said dual-switch
~~further contains comprising~~ two switches, one switch of
~~said two switches~~ rotating at even number of input
positions and another switch of ~~said two switches~~ rotating
at odd number of input positions sequentially.

Claim 10 (currently amended): The multiuser ~~DSSS-OFDM~~
~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication
~~transmitter system~~ of claim 8 wherein said bit detector is
used to ~~identifies~~ identify a ~~value of~~ output values of the
dual-switch ~~output~~.

Claim 11 (currently amended): The multiuser ~~DSSS-OFDM~~
~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication
~~transmitter system~~ of claim 1 wherein said multiband-based
~~multicarrier~~ modulation and ~~multicarrier~~ includes further
including eleven bit detectors, eleven multiband quadrature
phase-shifted keying (QPSK) modulations, [[one]] a
summation, and [[one]] an analog bandpass filter.

Claim 12 (currently amended): The multiuser ~~DSSS-OFDM~~
~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication
~~transmitter system~~ of claim 11 wherein said each of eleven
multiband QPSK modulations and ~~multicarrier~~ further
includes having a multi-oscillator, two oscillator
switches, and one an QPSK switch, ~~controlled by the a~~ bit
detector, and one up-carrier multiplier and one down-
carrier multiplier. an even-sequence-based mixer, and an
odd-sequence-based mixer.

Claim 13 (currently amended): The multiuser ~~DSSS-OFDM~~
~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication
~~transmitter system~~ of claim 12 wherein said multi-
oscillator ~~further comprising~~ ~~contains four carriers of~~
positive and negative carriers $\sin(2\pi f_i t)$, and positive and
negative carriers $\cos(2\pi f_i t)$.

Claim 14 (currently amended): The multiuser ~~DSSS-OFDM~~
~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication
~~transmitter system~~ of claim 12 wherein [[said]] one of the
two oscillator switches connects to either the positive
 $\cos(2\pi f_i t)$ or the negative $\cos(2\pi f_i t)$ [[;]] and another of the two
oscillator switches connects to either the negative $\sin(2\pi f_i t)$
or the positive $\sin(2\pi f_i t)$ at the same time.

Claim 15 (currently amended): The multiuser ~~DSSS-OFDM~~
~~DSSS OFDM~~ multiband of UWB ~~base station~~ communication
~~transmitter system~~ of claim 12 wherein said QPSK switch
either connects to either the up-carrier multiplier even-
sequence-based mixer or connects to the down-carrier
multiplier odd-sequence-based mixer.

Claims 16-28 (cancelled)

Claim 29 (new): The multiuser DSSS OFDM multiband of
UWB communication system of claim 11 wherein each of said
eleven bit detectors controls each of said eleven multiband
QPSK modulations.

Claim 30 (new): The multiuser DSSS OFDM multiband of UWB communication system of claim 12 wherein said bit detector controls said two oscillator switches and said QPSK switch.

Claim 31 (new): The multiuser DSSS OFDM multiband of UWB communication system of claim 12 wherein one of the two oscillator switches connects to the positive $\cos(2\pi f_i t)$ if the bit detector identifies "00" bits from output of the dual-switch.

Claim 32 (new): The multiuser DSSS OFDM multiband of UWB communication system of claim 12 wherein one of the two oscillator switches connects to the negative $\cos(2\pi f_i t)$ if the bit detector identifies "10" bits from outputs of the dual-switch.

Claim 33 (new): The multiuser DSSS OFDM multiband of UWB communication system of claim 12 wherein another of the two oscillator switches connects to the negative $\sin(2\pi f_i t)$ if the bit detector identifies "01" bits from the outputs of the dual-switch.

Claim 34 (new): The multiuser DSSS OFDM multiband of UWB communication system of claim 12 wherein another of the two oscillator switches connects to the positive $\sin(2\pi f_i t)$ if the bit detector identifies "11" bits from the outputs of the dual-switch.

Claim 35 (new): The multiuser DSSS OFDM multiband of UWB communication system of claim 12 wherein said QPSK switch connects to an output of said even-sequence-based mixer if said bit detector identifies "00" or "10" bits from said outputs of said dual-switch.

Claim 36 (new): The multiuser DSSS OFDM multiband of UWB communication system of claim 12 wherein said QPSK switch connects to an output of said odd-sequence-based mixer if said bit detector identifies "01" or "11" bits from said outputs of said dual-switch.

Claim 37 (new): The multiuser DSSS OFDM multiband of UWB communication system of claim 12 wherein outputs of said QPSK switch are a QPSK modulated data sequence.